ABSTRACT

BILINEAR-NONLINEAR LIMIT STOP FOR HARD DISK DRIVE ACTUATOR

[0048] A hard disk drive limit stop is designed with bilinear-nonlinear properties including a second element between a collar and the actuator. The second element has characteristics that are desired for a self servo write (SSW) start-up process. The limit stop has a crown, such as a cantilever spring, that is mounted to the collar. The stiffness of the crown gives the desired motion under the electrical current applied to the voice coil. The crown is made from material that does not stick to the actuator. Alternatively, the limit stop is used for SSW only, then rotated out of the way so that it is not used during normal operation of the hard disk drive. The SSW limit stop moves out of the way after SSW is complete so that another limit stop may be used during operation.